

Attorney Docket No.: LVIP:108US
U.S. Patent Application No. 10/734,566
Reply to Office Action of October 27, 2006
Date: February 23, 2007

Current Status of the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (cancelled)
2. (currently amended) The apparatus ultramicrotome as defined in Claim 9, wherein the light barrier is arranged substantially at the height of the knife blade and at a defined spacing between the knife and the specimen.
3. (currently amended) The apparatus ultramicrotome as defined in Claim 9, wherein the light barrier is arranged in stationary fashion with respect to the knife or to the specimen.
4. (currently amended) The apparatus ultramicrotome as defined in Claim 9, wherein the light barrier comprises a transmitter of electromagnetic radiation, in particular a laser or an LED, and a receiver of electromagnetic radiation.
5. (currently amended) The apparatus ultramicrotome as defined in Claim 4, wherein the transmitter and the receiver are mechanically coupled to the knife holder or to the specimen holder.
6. (currently amended) The apparatus ultramicrotome as defined in Claim 5, wherein the transmitter and the receiver are mounted in stationary fashion, in a housing wall of the cutting apparatus.
7. (currently amended) The apparatus ultramicrotome as defined in Claim 9, wherein an alternating drive system for moving the specimen at different speeds is further provided in the cutting apparatus.
8. (cancelled)
9. (currently amended) [[A]] An ultramicrotome comprising: a knife, defining a knife edge, a knife holder for clamping the knife, a specimen holder for holding a specimen, a feed device for generating a relative linear motion between the knife and the specimen, a light barrier being arranged parallel to the knife edge and located between the knife and the specimen, the arrangement of the light barrier is such that the relative linear motion between the knife and the specimen penetrates the light barrier and thereby ascertains a spacing of a few micrometers

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between the knife and the specimen to prevent contact between the knife and specimen, and to facilitate the cutting of specimen sections that are 300 nanometers or less thick.

10. (withdrawn) A method for bringing a specimen close to a knife of a microtome or ultramicrotome, comprising the steps of:

- securing the specimen in a specimen holder and the knife in a knife holder (24);
- moving the specimen and the knife toward one another with the aid of a feed device;
- providing a light barrier between the knife and the specimen, wherein the light barrier being arranged parallel to a knife edge of the knife;
- interrupting the motion of the specimen and the knife toward one another at a defined; and
- ascertaining a defined spacing between the knife and the specimen upon the interruption of the light barrier.

11. (withdrawn) The method as defined in Claim 10, wherein the feed of the feed device is deactivated as a result of detection of the interruption of the light barrier.

12. (withdrawn) The method as defined in Claim 11, wherein after the interruption of the light barrier, the spacing between the knife and the specimen is decreased by a predetermined amount.

13. (withdrawn) The method as defined in Claim 12, wherein after the interruption of the light barrier, the feed device is automatically switched over to a feed that corresponds to a predefined cut thickness or speed.

14. (withdrawn) The method as defined in Claim 12, wherein after the interruption of the light barrier, the feed device is automatically switched over to a feed that corresponds to a predefined cut thickness and speed.

15. (withdrawn) The method as defined in Claim 13, wherein a cutting window is automatically set using an alternating drive system, an interruption of the light barrier during an up-and-down motion of the specimen being used to code a coding device on the alternating drive system.

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16. (withdrawn) The apparatus as defined in Claim 9, wherein a cutting window is set automatically for said apparatus by arranging said light barrier between said specimen and said knife to detect a position of said specimen during an up and down motion.

17. (withdrawn) The apparatus as defined in Claim 16, wherein the point in time and duration of said light barrier interruption is conveyed to a coding device of an alternating drive system to set the cutting window automatically.

18. (withdrawn) A ultramicrotome comprising: a knife, defining a knife edge, a knife holder for clamping the knife, a specimen holder for holding a specimen, a feed device for generating a relative linear motion between the knife and the specimen, a light barrier being arranged parallel to the knife edge and located between the knife and the specimen, the arrangement of the light barrier is such that the relative linear motion between the knife and the specimen penetrates the light barrier and thereby ascertains a spacing of a few micrometers between the knife and the specimen, wherein said feed device generates motion in small steps that separates said knife and specimen after a first penetration of said light barrier in order to more accurately ascertain an interruption point of said light barrier.

19. (withdrawn) The apparatus as defined in Claim 18, wherein a cutting window is set automatically for said apparatus by arranging said light barrier between said specimen and said knife to detect a position of said specimen during an up and down motion.

20. (withdrawn) The apparatus as defined in Claim 19, wherein the point in time and duration of said light barrier interruption is conveyed to a coding device of an alternating drive system to set the cutting window automatically.